

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1-11 (Cancelled).

Claim 12 (Currently Amended): A linear oscillator, comprising:

a reciprocable moving part;

a case containing the moving part;

an amplitude control spindle moveably supported in the case;

an electromagnetic driving part housed in the case for reciprocating the moving part,

wherein the electromagnetic driving part comprises:

at least one permanent magnet, and

at least one coil surrounding the moving part; and

a spring member disposed at least between the case and the moving part and between the case and the amplitude control spindle to form a spring oscillation system,

wherein the moving part and the amplitude control spindle reciprocate at or near to a resonance frequency of the linear oscillator.

Claim 13 (Currently Amended): The linear oscillator according to Claim 12, wherein ~~the electromagnetic driving part includes a~~ the at least one coil is configured to ~~generate a~~

~~coil current~~ be fed with a current to control the moving part and the amplitude control spindle when reciprocating.

Claim 14 (Previously Presented): The linear oscillator according to Claim 12, wherein:

the spring member includes a coil spring, and
a mass of the amplitude control spindle including a first connecting element is larger than a mass of the moving part and a second connection element.

Claim 15 (Previously Presented): The linear oscillator according to Claim 12, wherein the moving part and the amplitude control spindle reciprocate at approximately the resonance frequency in respectively opposite phases.

Claim 16 (Previously Presented): The linear oscillator according to Claim 12, further comprising a shaft connected as a connection element to at least one of the moving part or the amplitude control spindle to output motion generated when the moving part and the amplitude control spindle reciprocate.

Claim 17 (Previously Presented): The linear oscillator according to Claim 16, wherein the shaft comprises a nonmagnetic substance.

Claim 18 (Previously Presented): The linear oscillator according to Claim 17, wherein only a portion of the moving part passing through the shaft comprises a magnetic substance.

Claim 19 (Previously Presented): The linear oscillator according to Claim 16, further comprising means for restricting an axial revolution of the shaft.

Claim 20 (Currently Amended): The linear oscillator according to Claim 19, wherein the means for restricting includes the spring member.

Claim 21 (Previously Presented): The linear oscillator according to Claim 12, further comprising means for preventing rocking of the amplitude control spindle.

Claim 22 (New): The linear oscillator according to Claim 13, further comprising at least one yoke, wherein the at least one yoke is located between the coil and the at least one permanent magnet.

Claim 23 (New): The linear oscillator according to Claim 22, further comprising an air gap between the at least one permanent magnet and the case and between the at least one yoke and the case.

Claim 24 (New): The linear oscillator according to Claim 22, wherein at least one of said at least one yoke and said moving part is provided with means for reducing eddy current loss.

Claim 25 (New): The linear oscillator according to Claim 16, wherein the shaft is fixed to the moving part and the amplitude control spindle surrounds partially or entirely the shaft.

Claim 26 (New): The linear oscillator according to Claim 16, wherein the shaft is fixed to the amplitude control spindle.

Claim 27 (New): The linear oscillator according to Claim 25, wherein the moving part is located in an upper portion of the case, and the amplitude control spindle is located in a lower portion of the case, and the shaft traverses the case in the upper portion of the case and in the lower portion of the case.

Claim 28 (New): The linear oscillator according to Claim 13, wherein the coil is fixed to the case.